

REMARKS

Claims 1, 3-13, 15-24, 49, and 50 were rejected as anticipated by Chong, and claims 2 and 14 were rejected as obvious over a combination of Chong and Officially Noticed facts. Claims 1, 4, 13, and 16 have been amended, claims 3, 8, 15, and 20 have been canceled, and claims 53 and 54 have been newly added by amendment. No new matter has been added by the present amendments. In view of the amendments and the Remarks, the Applicant respectfully requests allowance of the pending claims.

Rejections under 35 U.S.C. §102

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). For a process, anticipation requires identity of the claimed process and a process of the prior art. The claimed process, including each step thereof, must have been described or embodied, either expressly or inherently, in a single reference. *Glaverbel S.A. v. Northlake Mkt'g & Supp., Inc.*, 45 F.3d 1550, 33 USPQ2d 1496 (Fed. Cir. 1995). Those elements must either be inherent or disclosed expressly. *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 7 USPQ2d 1057 (Fed. Cir. 1988). Those elements must also be arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989).

Independent Claim 1

Claim 1 has been amended to incorporate the subject matter of claim 3 and claim 8. The Applicant respectfully asserts that no new matter has been added by the amendment of claim 1. Claim 1 has been amended to recite in part:

a switch arranged between the processors and the storage devices, wherein the switch independently routes a request for retrieving data from the designated processor directly to the storage devices containing the requested data based on directory information obtained by the processor, and independently routes responses from the storage devices directly to the designated processor based on the directory information obtained by the processor, and wherein the data comprises video stream data.

To support a rejection of claim 1, the Office Action states:

Regarding claim 1, figures 9 and 10 of Chong illustrate a system [32] comprising a plurality of storage devices [18A,B], a plurality of transfer nodes [34A-C], and a switch [36] arranged between the processors and the storage devices. Col. 14, ll. 8-16. Data is distributed across the plurality of storage devices, col. 7, ll. 5-14, 54-58; and each transfer node includes a processor [52], fig.4, col. 8, ll. 1-5. Upon receipt of a request for retrieving data, a processor is designated for handling the request. Col. 11, ll.34-38, describing receipt of a read command that identifies transfer node as the commands destination. The switch independently routes a request for retrieving data from the designated processor directly to the storage devices containing the requested data and independently routes responses from the storage devices directly to the designated processor. Col. 6, ll. 44-48, 58-64, col. 12, l. 47 – col. 12, l. 7. Office Action at pages 2-3.

The Applicant respectfully asserts that claim 1 is allowable for at least the reason that the cited language from Chong does not teach or disclose every element of claim 1. For example, Chong at Col. 6, lines 44-48 discloses:

Switch 36 is a conventional switch, and merely routes received packets within storage system 32. Switch 36 does not have an address, and communication packets are not addressed to switch 36.

Chong at Col. 6, lines 58-64 discloses:

As will be described in more detail below, transfer node 34 eliminates storage controller 38, and link 40C in the embodiment of FIG. 3A, from a data path between host computer 12 and storage devices 18A-18B, thus allowing independent scalability of a number of input/output operations per second (IOPS) and a data transfer rate of storage system 32.

Chong at Col. 12, line 45 to Col. 13, line 7 discloses:

A receive unit of channel port 50B of transfer node 34 receives the encapsulated translated read command packets and the lookup table information. CPU 52 stores the lookup table information within memory 54, extracts the first and second translated read command packets from the encapsulating packets, and forwards the first and second translated read command packets to the

transmit unit of channel port 50B. The transmit unit of channel port 50B transmits the first translated read command packet identifying storage device 18A as its destination (XID=A,C) upon link 40B in FIG. 3A, and transmits the second translated read command packet identifying storage device 18B as its destination (XID=A,D) upon link 40B in FIG. 3A. Switch 36 receives the first and second translated read command packets via link 40B. Switch 36 routes the first translated read command packet to storage device 18A via link 40D, and routes the second translated read command packet to storage device 18B via link 40E.

Storage device 18A receives the first translated read command packet, accesses the requested data, and transmits a first data packet including the requested data to transfer node 34 (XID=C,A). Similarly, storage device 18B receives the second translated read command packet, accesses the requested data, and transmits a second data packet including the requested data to transfer node 34 (XID=D,A). Storage devices 18A-18B also generate status packets relaying the status of the read operations. The flow of data packets will be described first, followed by a description of the flow of status packets. Switch 36 routes the first and second data packets to transfer node 34.

As seen above, Chong discloses the use of a “transfer node” that, according to Chong, allows for elimination of the “storage controller” from a data path between a host computer and storage devices. Chong at Col. 6, lines 58-64. Chong also discloses a “switch”, which is described as “a conventional switch, and [it] merely routes received packets within storage system 32.” Chong at Col. 6, lines 44-46.

Claim 1 recites a switch that independently routes requests and responses based on directory information obtained by the processor designated for handling the request. The Applicant respectfully asserts that the above-cited language’s references to a “transfer node”, a “storage controller”, and a “switch” do not teach or disclose a switch that independently routes requests and responses based on directory information obtained by the processor designated for handling the request, as recited in claim 1. For anticipation, there must be no difference between the claimed invention and the reference disclosure as viewed by a person of ordinary skill in the field of the invention. *Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 (Fed. Cir. 1991). While the above-cited language references a “transfer node”, a “storage controller”,

and a “switch”, these references do not disclose a switch that independently routes request and responses based on directory information obtained by the processor designated for handling the request, as recited in claim 1.

To support a rejection of claim 3 (which has been canceled and incorporated into claim 1), the Office Action states:

As to claim 3, Chong discloses the system of claim 1, as discussed above, wherein the switch routes the request for retrieving data based on directory information obtained by the processor, col. 7, ll. 30-44.

Chong at Col. 7, lines 30-44 discloses:

Storage controller 38 receives a data transfer command (i.e., a data read or write command) from host computer 12 via a control path including transfer node 34, switch 36, and links 40A-40C. Storage controller 38 translates the data transfer command dependent upon: (i) the data transfer command, and (ii) configuration information of storage devices 18A-18B (e.g., a RAID configuration of storage devices 18A-18B). Storage controller 38 thereby produces one or more translated data transfer commands each directed to a storage device 18. Storage controller 38 forwards the one or more translated data transfer commands to transfer node 34. Transfer node 34 forwards the translated data transfer commands to storage device 18A and/or storage device 18B as appropriate.

The above-cited language from Chong discloses that a “storage controller 38” receives data from a “control path” that includes “transfer node 34, switch 36, and links 40A-40C.” However, the cited language’s references to a “storage controller”, a “control path”, a “transfer node”, a “switch”, and “links”, do not disclose the invention of claim 1, when claim 1 is properly considered as a whole. For example, the above-cited language does not disclose a switch that independently routes requests and responses based on directory information obtained by the processor designated for handling the request, as recited in claim 1.

In the Response to Arguments section of the Office Action, it is stated that:

At page 6 of the reply, Applicant argues that even if switch 36 of Chong does not independently route data, it still does not route “based on directory information” as claimed. However, Chong discloses that the switch routes data packets based on their destination addresses, which either storage controller 38 or transfer

node 34 can derive by referencing “lookup table information.”
(Chong, col. 12, ll. 36-44.)

Chong at Col. 12, lines 36-44 discloses:

Storage controller 38 also conveys the lookup table information to transfer node 34. Storage controller 38 may, for example, include the lookup table information within the encapsulating packets used to encapsulate the first and second translated read commands. Alternately, storage controller 38 may packetize the lookup table information separately and convey the lookup table information to transfer node 34 within packets separate from the encapsulated translated read command packets.

The Applicant respectfully asserts that further references to a “storage controller” and a “transfer node”, and a reference to “lookup table information within the encapsulating packets”, do not disclose every element of claim 1. For example, the cited language makes no reference to a switch, nor does it disclose a switch that independently routes requests and responses based on directory information obtained by the processor designated for handling the request, as recited in claim 1. Thus, the Applicant respectfully asserts that there are differences between claim 1, when claim 1 is properly considered as a whole, and the cited language from Chong. Accordingly, claim 1 is allowable for at least the reason that the above-cited language does not teach or disclose a switch that independently routes requests and responses based on directory information obtained by the processor designated for handling the request, as recited in claim 1.

Independent Claim 13

Claim 13 has been amended to incorporate the subject matter of claims 15 and 20. No new matter has been added by the amendment of claim 13. The Applicant respectfully asserts that claim 13 is allowable for at least the reason that the cited language from Chong does not teach or disclose returning responses from the storage devices directly to the designated processor via the switch, wherein the switch uses directory information obtained by the processor to independently route the request for retrieving data and the responses between the storage devices and the processor, as recited in claim 13.

Dependent Claims 2, 4-7, 9-12, 14, 16-19, 21-24, and 53-54

The Applicant respectfully asserts that claims 2, 4-7, 9-12, 14, 16-19, 21-24, and 53-54 are allowable for at least the reason that each depends from an allowable claim.

Claims 53 and 54 have been newly added by amendment. No new matter has been added. Claims 53 and 54 have support in the Application as filed, for example, at paragraph [0007]. Claim 53 is allowable for at least the reason that Chong does not teach or disclose the system of claim 1 wherein the directory information comprises an amount of the data to be stored, as recited in claim 53. Similarly, claim 54 is allowable for at least the reason that Chong does not teach or disclose the method of claim 16 wherein the directory information comprises an amount of the data to be stored, as recited in claim 54.

CONCLUSION

In view of the Remarks, each of the presently pending claims in the Application is believed to be in immediate condition for allowance. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,
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